



Sodium Fluoroacetate

(CAS #62-74-8)

Information for the Public

What is sodium fluoroacetate?

Sodium fluoroacetate is a fine, white, odorless powder that is sometimes dyed black. It is known as Compound 1080, Fratonol, Furaton, Ratbane 1080, Yasoknock, Ten-Eighty, SMFA, and sodium monofluoroacetate. It dissolves easily in water and can seep into the soil and groundwater where it can persist for one-two weeks in warm weather/high humidity and up to two months in extreme cold or drought. It is a highly toxic substance and may be fatal if inhaled, swallowed or absorbed through the skin. There is no known antidote for sodium fluoroacetate poisoning.

How is sodium fluoroacetate used?

Sodium fluoroacetate was developed for use as rodent control in the 1930s. Its use has since been restricted in the United States due to its highly toxic properties and it is not registered for use in Michigan. Some western states legally use the chemical for predator control by injecting it into collars worn by sheep and other livestock. It is still used as rodent and pest control in other countries.

How can people be exposed to sodium fluoroacetate?

Accidental exposure to sodium fluoroacetate can occur in industries where it is produced or used. Workers can expose their family members by wearing contaminated clothing home.

Though unlikely, the general population may be exposed by breathing contaminated air or by drinking contaminated water from a facility using or storing sodium fluoroacetate, by skin or eye contact with the powder, or by eating food that has been contaminated with sodium fluoroacetate. People can also be exposed from contact with animals poisoned with sodium fluoroacetate.

How can sodium fluoroacetate affect my health?

The degree of reaction to any chemical exposure depends on three main factors: the amount one is exposed to, the route of exposure (breathing, touching, ingestion) and the length of time of the exposure. Populations of special concern (children, pregnant women, the chronically ill, the elderly, etc.) may be more sensitive to exposures than the general population.

Exposure can occur by:

- **Breathing** – Breathing in sodium fluoroacetate powder is a route of exposure.

- **Eating/Drinking** – Ingestion (swallowing) is the most likely route of exposure. Poisoning can occur from drinking a solution of sodium fluoroacetate or swallowing the powder. Poisoning occurs very fast when sodium fluoroacetate is swallowed.
- **Skin/Eyes** – Sodium fluoroacetate is not well absorbed through the skin and the eyes.

Note: Adverse health effects usually occur within 30 minutes to 2 ½ hours after exposure to sodium fluoroacetate but can be delayed for as long as 20 hours depending upon the route and amount of exposure.

Short term (acute) effects –

The following **acute** effects may be noted immediately or shortly after exposure:

- Eye contact with the powder can irritate and burn the eyes.
- Exposure to sodium fluoroacetate by ingestion can cause nausea, vomiting, diarrhea and abdominal pain.
- Breathing sodium fluoroacetate can cause nose and throat irritation, coughing and shortness of breath.
- Greater exposure can cause numbness of the face, twitching, blurred vision, involuntary eye movement, severe shortness of breath, anxiety, hallucinations, muscle spasms, seizure, swelling and spasms in the airway, a build-up of fluid in the lungs (pulmonary edema), heart rhythm changes, kidney failure, heart failure, coma and death.

Long term (chronic) effects –

The following **chronic** health effects can occur after high or repeated exposure and can last for months or years:

- There is limited evidence that long-term exposure may damage the testes, (male reproductive glands).
- Exposure can cause severe brain and other neurological damage.
- Smoking may worsen symptoms of diseases/conditions related to sodium fluoroacetate exposure.
- Animal studies have shown that repeated exposure can cause heart, kidney, liver and thyroid damage.

What should I do if exposure to sodium fluoroacetate occurs?

Seek professional medical attention immediately! There is no known antidote.

- **Eye contact** – Flush the eye(s) with large amounts of water, occasionally lifting the upper and lower lids, for at least 15 minutes. If contact lenses are worn, remove them if possible.
- **Skin contact** – If skin has been come in contact with sodium fluoroacetate, immediately remove the affected clothing, jewelry and shoes. Wash the area with large amounts of soap and water. To prevent further exposure, cut the clothing off. Do not pull the contaminated

clothing over the head. Double bag the contaminated clothing and place in closed containers until it can be disposed of properly.

- **Breathing** – Leave the area of the exposure and move to a source of fresh air. Keep the exposed individuals warm and allow them to rest until professional medical care can be given.
- **Ingestion** – Do not induce vomiting. Keep the individual warm and allow them to rest until professional medical help can be given.
- ***To avoid cross-contamination, do not use the mouth-to-mouth rescue breathing method on an individual if they have ingested or inhaled sodium fluoroacetate or if ingestion or inhalation is suspected.***

Are there medical tests to show whether I have been exposed to sodium fluoroacetate?

If repeated exposures or overexposure is suspected, the following may be useful:

- Measurement of blood citrate levels may be necessary as these may be elevated after exposure.
- Chest x-rays for patients who have experienced short, intense exposures should be considered.
- Thyroid, liver and kidney function tests should be considered.
- Continuous EKG monitoring may be necessary.

How can I prevent or minimize exposure to sodium fluoroacetate?

- Under normal working conditions, use proper handling and storage methods. Be sure to follow posted hazard and warning information. Enclose operations and/or use local exhaust ventilation. Personal protective equipment and respiratory protection may be required. Wash the hands before eating, drinking, or smoking. Wash thoroughly at the end of the work shift and immediately after exposure.
- In the event of accidental or intentional release, leave the area immediately. If indoors, leave the building. If outdoors, move away from the substance.
- Do not eat or handle animals that may have been poisoned.
- Contact lenses should not be worn when working with sodium fluoroacetate.

What should I do if I have an unwanted supply of sodium fluoroacetate?

If you find an unwanted or unregistered supply of any pesticide or rodenticide, contact the Michigan Department of Environmental Quality Household Hazardous Waste Collection, 517-373-1322 or <http://www.michigan.gov/deq>.

For more information on sodium fluoroacetate:

- Michigan Department of Community (MDCH) Health Toxics and Health Hotline: 1-800-648-6942
- Agency for Toxic Substances and Disease Registry (ATSDR): 1-888-422-8737

For immediate assistance, call the Poison Control Center hotline: 1-800-222-1222.
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